Material Management and Accounting System (MMAS)

DCMA Workshop 2000

Viewgraphs

Application Program: MS PowerPoint/MSBinder
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IMPORTANT PRINTING INSTRUCTIONS:

- *Do not print entire binder at one time. This may create an overload for some printers.*

MMAS, Course2000

- Unit A
  - Pre-evaluation topics
- Unit B
  - Approaches, techniques, and perspectives, by standard
- Unit C
  - Communication of evaluation results

Unit A

Upon completion of this unit, participants will be able to make decisions based on knowledge of the historical, legal, technical, and risk factors that underlie the review of compliance with the 10 MMAS standards.

Unit A

- Lesson A-1:
  - Purpose and scope of MMAS
  - How 10 standards ensure adequate material management and accounting
  - Guidance available
- Lesson A-2:
  - DFARS 242.72 and 252.242 -7004 requirements
  - Adequate review
- Lesson A-3:
  - Planning and risk assessment

MMAS (Material Management and Accounting System)

- 10 standards are in DFARS 252.242-7004; governed by DFARS 242.72
- Supplier's system for planning, controlling, and accounting for:
  - Acquisition
  - Use
  - Disposition of material
- Larger suppliers must have the ability to plan, control, and account for material
- 10 Standards prescribe specific criteria
- Principles are appropriate for government AND commercial businesses

MRP (Material Requirements Planning) Systems

- Inventory *control* method, NOT inventory *costing*
- Provide information used for costing
- Advanced systems capable of dynamic rescheduling
- Time-phasing capability
  - Maintain low inventory levels

MRP- I (Material Requirements Planning) VS. MRP-II (Manufacturing Resource Planning)

- **MRP-I**:
  - Automated Management System
  - Explodes Bill of Materials (BOM)
  - Accumulates total requirements
  - Nets material requirements and availability
  - Calculates planned order releases

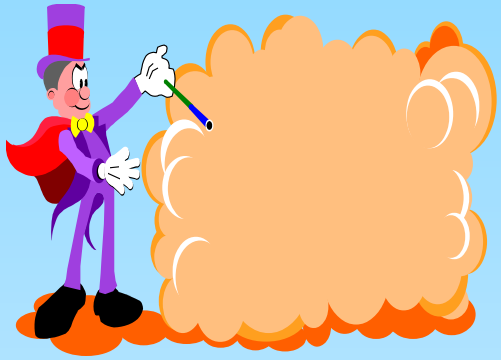
- **MRP-II** -- same as MRP-I plus links together:
  - Business planning
  - Production planning
  - Master production scheduling
  - Material requirements planning
  - Capacity requirements planning
  - Execution support systems for capacity and material

Enterprise Resource Planning (ERP)

- Includes MRP II plus links together:
  - Sales and Marketing
  - Engineering
  - Distribution/Logistics
  - Quality
  - Field Service
  - All Financial, Human Resources and Management Reporting Functions
- Single, integrated, corporate information system
- Used for effective planning and controlling of all resources needed to take, make, ship and account for customer orders.

The Netting Process

The Amazing Mr. MRP!!



Basic Netting Process Formula:

Gross requirements
- Inventory on hand
- Scheduled receipts
± Safety stock
= Net requirements

1. If net requirements exist, planned orders are created.
2. If net requirements are negative, an on hand inventory results.
3. If net requirements are zero, the system is in balance and no action is necessary.

Origin of MMAS

- Incentives to minimize material costs are different in commercial and government environments
- Early MMAS reviews disclosed many common problems
- DoD/Industry Task Force agreed on 10 key elements/standards
  - Located in DFARS 252.242-7004
  - Governed by DFARS 242.72 by reference therein
- Commercial MRP software systems modified to comply with 10 standards

ORIGINAL DEFICIENCIES	REMEDIES
Lack of internal controls	MMAS preface
Lack of system documentation, knowledgeable personnel, policies, procedures, and operating guidance	Standard #1
Inaccurate requirements & time-phasing	Standard #2
Improper accounting for, or failure to identify, excess and residual inventory	Standard #3
Lack of audit trails	Standard #4
Inaccurate inventory records	Standard #5
Inaccurate tracking and costing of transfers; improper use of "loan/paybacks"	Standard #4 - audit trails Standards #6 and #7
Material allocated without contractual requirements	Standard #8

Guidance

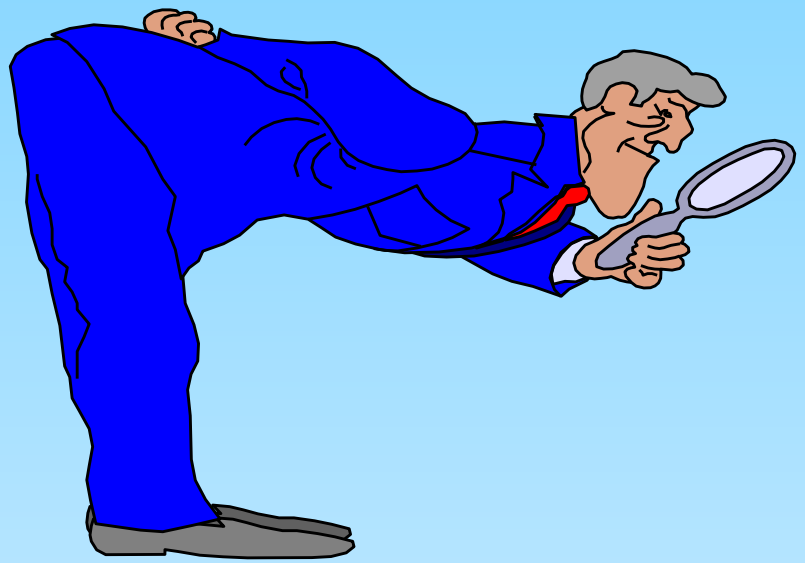
1. DCMA One Book
2. Surveillance Plan
3. DFARS 242.72 & 252.242-7004
4. Previous review data
5. Your supervisor
6. This training course
7. Senior Functional Advisor (SFA)
8. District Process Champion

Lesson A-2

- DFARS 242.72 and 252.242-7004

- Adequate review

What's in_ DFARS 242.72?



Policies, procedures, and standards for use in evaluating a supplier's MMAS

DoD Policy

All suppliers should have an MMAS that:

- Reasonably forecasts material requirements
- Ensures costs of purchased and fabricated material charged or allocated to a contract are based on valid, time-phased requirements
- Maintains a consistent, equitable, and unbiased logic for costing of material transactions
- Conforms to the 10 standards

Who Must Comply?

The Contract clause requires conformance

PCO inserts clause in all solicitations and resulting contracts which:

1. Exceed simplified acquisition limitation
2. Are not for acquisition of commercial items
3. Are not awarded under FAR set-aside or Section 8(a) procedures of FAR Part 19
4. Are either cost reimbursement or fixed price contracts with government financing

A large business supplier is also subject to disclosure, review, and maintenance require-ments:

- If had $70 million in prime or subcontracts (incl. modifications) in preceding fiscal year
- Threshold can be as low as $40 million, if potential risk exists
- These requirements do NOT apply to small businesses, educational institutions, or nonprofit organizations

When is MMAS Disclosure and review Adequate?

- Government neither approves nor disapproves MMAS
- Systems/transactions can be manual or automated
- Disclosure is adequate when supplier provides ACO:
  - **Documentation which adequately describes its *current* MMAS policies, procedures, and practices**
  - **Sufficient detail for government to reasonably make a determination as to it's adequacy**
  - **Notification of any significant changes within 30 days of implementation**
- review is adequate when supplier provides:
  - **Sufficient evidence to review the degree of compliance of its MMAS to standards**
  - **Identification of any significant deficiencies, estimated cost impact to government, and a comprehensive corrective action plan**

reviews
(Bottom Line)

- Depend on supplier's environment
- Supplier describes his systems, procedures, and testing
- Supplier's analysis and test work must be presented before determining adequacy of review
- To facilitate review and evaluation:
  - Communicate early and often about benefits of having an adequate MMAS
  - Communicate to supplier management when substandard internal audit work is encountered
  - Notify the supplier of review requirements

Inadequate reviews

- Notify ACO of deficiencies
- Ask supplier to resubmit its review
- Identify additional information needed
- If supplier does not respond within a reasonable time:
  - ACO can suspend or withhold payments
  - DCAA determines immediate financial risk for ACO to use to develop reasonable withhold
  - Assigned MMAS Team Leader notifies ACO when review is adequate

Review Procedures

DFARS 242.7205(a)

- Conduct an MMAS review only if:
  - Medium risk
  - High risk
- Joint effort
  - DCMA
  - DCAA
  - Supplier representatives
- ACO’s responsibilities:
  - Ensure team includes appropriate functional specialists
  - Appoint a team leader

Team Member Responsibilities

- DFARS 242.7204(c):
  - Evaluate MMAS
  - Assess impact of deficiencies
  - Evaluate corrective actions

- Establish evaluation baseline:
  - ***Initial*** MMAS review--document date the system was found compliant
  - ***Future*** MMAS reviews--look at system changes and verify supplier is maintaining its MMAS as determined compliant at date of last evaluation

  MMAS compliance cannot be determined until evaluation of all 10 standards is completed

Responsibilities

- **CAO**
  - Establish and manage programs for evaluating the MMAS systems of contractors subject to disclosure, and maintenance requirements
  - Establish and maintain an MMAS team
  - Establish a risk based assessment schedule

Disposition of Findings

DFARS 242.7205(b):

- Assigned Team Leader issues report to ACO
  - If significant deficiencies exist, include estimate of adverse impact to government
- ACO gives copy of report to supplier
- ACO and team leader evaluate supplier's response
- ACO sends written notification to supplier
- When significant deficiencies exist:
  - ACO considers effect in estimating system reviews
  - ACO and team leader monitor progress towards correcting deficiencies
  - ACO considers taking additional action(s)
  - Price Analyst/DCAA notes condition in audit reports

Lesson A-3

- Review planning considerations
- Preliminary risk assessment
- Major risk areas
- Assessment tools
- MMAS documentation requirements

Purpose of Evaluation

Gather sufficient information to express an opinion on the adequacy of the supplier's MMAS and its related internal controls for compliance with DFARS MMAS criteria

MMAS Evaluation Planning

- Obtain/document sufficient understanding of MMAS to plan related evaluation effort
- Test operational effectiveness of MMAS ; determine if MMAS adequately conforms to 10 MMAS standards
- Assess/document risk level as basis for design of substantive tests
- Report on understanding, risk assessment, and supplier’s level of compliance with MMAS standards
- Specify 10 MMAS standards as control objectives
- Identify control ***procedures*** to protect government
- Suggest evaluation procedures

MMAS Evaluation Planning

- The team leader needs to obtain a clear understanding of the MMAS to the extent necessary to plan the review

- Any testing of the Supplier's systems, within the scope of the MMAS, should result in reduction in duplicative oversight efforts

Three *Different* Types of Testing

- Tests to confirm understanding--walk-through procedures
- Tests of controls--used to determine whether policies and procedures are:
  - Adequately designed to prevent or detect material misstatements in a timely manner
  - Operating effectively
- Substantive tests
  - Performed when Risk is assessed as Moderate or High
  - Extent reduced when Risk is assessed as Low
  - Have different objectives than tests of controls

IMPORTANT: Substantive tests are performed during subsequent related reviews, unless combined with tests of controls within the MMAS review.

Two Different Risk Assessments

Initial Risk Assessment helps plan this review--decide whether to:

- **Assess Risk at maximum for control objective(s) and perform substantive tests in future reviews OR**
- **Assess Risk below maximum and perform tests of controls now, within the MMAS evaluation**

Final Risk Assessment:

- **Complete after performing a detailed evaluation**
- **Serves as a team opinion**
- **Input to DCMA Risk Assessment Management Planning (RAMP) software module**
- **Provides useful information for planning future reviews**

Documentation Requirements:

- **Document "basis" for Risk Assessment**
- **Details of *all* assessments must be described; if Risk is assessed as moderate or high, assessments must be tied to specific significant deficiencies**

Documentation

- Summarizes assessment of risk for each of the 10 standards
- Should reflect review baseline for each standard evaluated and found compliant
- Part of permanent file
- Used by others in planning other evaluations
- Part of risk handling plans

Report Date _____

_____
(Contractor Name)

I. RISK ASSESSMENT

Control Objectives	Risk Level (System: Adequate/Inadequate) Low	Mod	High	Support
1. System Description, Std. 1	_____	_____	_____	_____
2. Material Requirements, Std. 2	_____	_____	_____	_____
3. System Monitoring, Std. 3	_____	_____	_____	_____
4. Audit Trails, Std. 4	_____	_____	_____	_____
5. -Physical Inventories, Std. 5	_____	_____	_____	_____
6. -Material Transfers, Std. 6	_____	_____	_____	_____
7. -Costing Matl. Transactions, Std. 7	_____	_____	_____	_____
8. -Inventory Allocations, Std. 8	_____	_____	_____	_____
9. -Commingled Inventories, Std. 9	_____	_____	_____	_____
10. -Internal Audits, Std. 10	_____	_____	_____	_____

Include working paper references or explanation to support all risk assessments. Briefly explain the reported system deficiencies which support all risk assessments (use continuation sheets as needed):

II. OVERALL SYSTEM

Adequate _____ Inadequate: Overall _____
In Part _____

III. IMPACT ON THE SCOPE OF OTHER REVIEWS

Review Areas	Required Substantive Testing Minimum	Increased	N/A	Describe General Scope of Required Substantive Testing (Use continuation sheets as needed)
Contract Pricing	_____	_____	_____	_____
Quality System Evaluation	_____	_____	_____	_____
Configuration Management	_____	_____	_____	_____
CPSR	_____	_____	_____	_____
Earned Value Management	_____	_____	_____	_____
Billings	_____	_____	_____	_____
Property Control	_____	_____	_____	_____
Schedule/Delivery Management	_____	_____	_____	_____
Other	_____	_____	_____	_____

Initials/Date: MMAS Team Leader _____ Team Members _____ _____ _____

RISK ANALYSIS

- Use MMAS Risk Matrix for Cost, Schedule and Performance (Link to the RAMP similar criteria to be posted to the Supplier Risk Management chapter)
- Assign levels of risk based on Likelihood and Consequence analysis and rating (Link to a new “Likelihood & Consequence” Matrix to be posted)

Preliminary Risk Assessments

Pre-Review:

- Determine areas to watch closely during review
- Openly communicate review requirements to supplier
- Suggest, but don't direct

Post-Review:

- Determine to what extent, if any, we can rely on internal and external data and work performed
- Complete ***initial*** Risk Assessment
- Adjust review scope/focus on most critical areas

Major Risk Areas

- Any noncompliance can generate cost or schedule impact
  BUT, most likely areas involve:
  - Standard #2, inaccurate and/or premature billing of materials
  - Standard #5, not maintaining reasonable inventory accuracy levels
  - Standard #7, improper costing of transfers
  - Standard #8, inaccurate billing algorithms

Some Assessment Tools

- Budget planning
- TIP: Ask suppliers not required to review, to self-assess and/or organize their policies and procedures
- Before beginning detailed steps, these indicators may be helpful:
  - Inventory turnover report
  - Months on hand
  - Total requirements vs. total on-hand inventory
  - Periodic inventory counts/ reconciliations
  - Transfer activity
  - Consider complementary effect
  - Supplier’s internal audit reports

Working Paper Documentation

- Organize work upfront by the 10 standards
- Refer to Risk Handling Plan
- Include:
  - Basis for reliance on work of others
  - Results of all risk assessments
  - Reasons for changing review direction
  - Procedures used to verify each standard
  - Basis for resolving previously reported deficiencies
  - review baseline--date(s)

Unit B

Approaches,
techniques,
and perspectives
for each
of the
10 standards

Standard #1

- Foundation of MMAS evaluation
- Requirement:
  - "Have an adequate system description including policies, procedures, and operating instructions compliant with FAR and DFARS."
- Intent:
  - Ensure supplier has sufficient written documentation to describe how its MMAS is supposed to work.

System Description Requirements

Definition: - Description of the various functions that interact to make up the MMAS, e.g., a flowchart backed up by narrative descriptions of each function

- Should clearly describe how MMAS is designed, how it operates, and how it interacts with various systems and processes that affect development and flow of material requirements

- No prescribed method

Policies
And Procedures

Policies - These are management's statements of principles for accomplishing its business objectives.

Procedures - Procedures implement the supplier's policies by prescribing directions for performing both automated and manual tasks or functions in terms of what to do; who will do it; how to do it; and when, where, and why it is done.

Considerations

- Ensure MMAS description:
  - Contains sufficient written documentation to describe how system works and is understandable
  - Describes its controls
- Consider supplier's internal audits (Standard #10)
- Map suppliers policies to individual MMAS standards
- Perform Risk Assessment by individual MMAS standard

Standard #10

Requirement

- Supplier's MMAS must "be subjected to periodic internal audits to ensure compliance with established policies and procedures"

Intent

- Ensure policies, procedures, and controls required by Standard #1 are continually developed, updated, and followed

Evaluation Approach

Verify supplier's periodic reviews

- Review sufficient data:
  - Audit reports, follow-up action and future oversight plans
- Evaluate data--consider:
  - Results of previous reviews of internal audit function
  - Objectivity and expertise of organization performing internal audits
  - Stability of supplier's MMAS

MMAS Standard #2

Requirement

- Ensure costs of purchased and fabricated material charged or allocated to a contract are based on valid, time-phased requirements as impacted by minimum /Economic Order Quantity (EOQ) restrictions.

- 98% BOM accuracy and 95% Master Production Schedule (MPS) accuracy are desirable as goals in order to ensure requirements are both valid and appropriately time-phased.

MMAS Standard #2

- If systems have accuracy levels below these goals, supplier must reviewnstrate:
  - There is no material harm to the government due to lower accuracy levels
  - Cost to meet the accuracy goals is excessive in relation to the impact on the government

Intent

- To have cost effective, valid, and time-phased material

General Approach

- Understand supplier's BOM and MPS systems
- Concentrate on INTENT of standard
- Verify controls are adequate and in place
  - Determine whether supplier's measurement methods are adequate
  - Consider impact of prior deficiencies and other circumstances
  - Perform Risk Assessment
  - Review sample of parts to ensure materials are valid and time-phased
  - Look for potential problems and contributing factors
- Identify effect of any problem

Approach--
BOM Accuracy

Verify material is valid

- Compare BOM to source documents, for example:
  - Verify part numbers, quantities, unit of measure (UOM), make/buy code, higher assembly part number
- Calculate accuracy percentage
- If accuracy is less than 98%
  - Work with the supplier to determine root cause and corrective action
  - Work with the supplier to determine if lower accuracy percentage will not result in material harm or the cost to meet goal is excessive

MPS Accuracy

- No standard measure for computing MPS accuracy (goal is 95%)
- Elements to measure:
  - All part numbers are included
  - Ensure system performs adjustments when date changes are made
  - Quantities are consistent with the contract requirements
  - Verify reasonable relationship between MPS and contractual completion dates
  - Verify reasonableness of lead times
  - Compare actual dates materials were received to planned receipt dates

MPS Accuracy (cont.)

If accuracy is less than 95%

- Work with the supplier to determine root cause and corrective action
- Work with the supplier to determine if lower accuracy percentage will not result in material harm or the cost to meet goal is excessive

Minimum Buy/EOQ Restrictions

Minimum Buy - The minimum quantity that the supplier is required to purchase.

EOQ - A type of fixed-order-quantity model that determines the amount of a stock to be purchased or manufactured at one time. The intent is to minimize the combined costs of acquiring and carrying inventory.